Real-Time Lookup in Quick Fields

White Paper

September 2006

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Introduction to Real-Time Lookup

Real-Time Lookup is an add-on that allows Quick Fields to communicate with a third-party database using Open Database Connectivity (ODBC). The add-on includes two processes called Lookup and Field Verification. Both processes compare a value taken from the document to the values stored in a column of the third-party database. If there is a match, Lookup retrieves the corresponding values in the same row and makes them available as tokens. Field Verification can flag and/or delete the values that do not generate a match in a specified column of the database.

For example, suppose you have a database of employees and their contact information. You would like to use this database to fill your documents' template fields with the contact information of that document's author, then file the documents into subfolders by author. You could use Zone OCR to extract the author's name from each document. Lookup can then take these values and generate tokens for you to use in your template fields. These tokens will automatically be replaced with the contact information that matches with each author. You can then use Zone OCR's name token to specify the destination folder for your documents. Field Verification can clear name tokens whose values are not found in the database, so that you do not create subfolders for employees who no longer work for your company. The following figures give a general overview on how Lookup works.

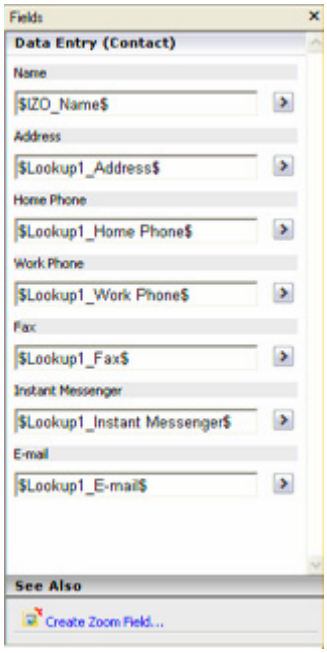

Figure 1a: Lookup tokens are used to populate template fields.

	A	B	C	D	E	F	G
1	Name	Address	Home Phone	Work Phone	Fax	Instant Mes	E-mail
2	Misae Elliott	147 Eucalypt	123-456-7890	654-0987	654-0988	MktngMisae	melliott@com
3	Laura Hill	741 Van Nes	789-456-1230	654-0321	654-0322	HRLaura	hill@compar
4	Michael Jones	238 Strathmc	281-330-8004	480-0330	480-0331	SalesMike	mjones@com
5	Shawn Paul	417 Airport E	456-123-7890	321-0987	321-0988	DevShawn	spaul@comp
6	Danielle Scully	339 Roswell	113-555-0113	555-1013	555-1014	EngDana	dscully@com
7	Samuel Tran	488 Market S	415-888-8888	898-9898	898-9899	AdminSam	stran@comp
8	Jaye Tyler	412 Haight St	415-135-2468	531-8642	531-8643	SalesJaye	jtyler@comp
9	Robert Valentino	577 Fillmore	562-777-7777	757-5757	757-5758	DevBobby	rvalentino@c

Ready NUM

Figure 1b: Real-time Lookup compares the author's name to those listed in a database. When it finds a match, it uses the other values in that row for the tokens.

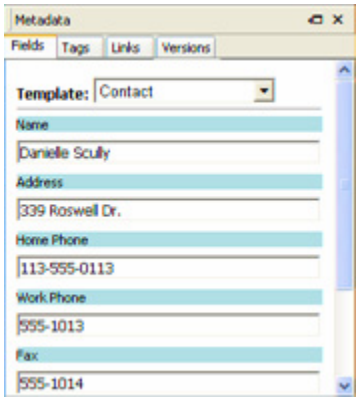

Figure 1c: The tokens are replaced by corresponding values from the database.

This white paper addresses the Real-Time Lookup add-on. It assumes that you are familiar with the basic Quick Fields operation. For more information on Quick Fields, refer to the Quick Fields help file or the user manual.

Real-Time Lookup supports a variety of common database formats such as Microsoft SQL Server databases, Excel files, Access files, comma-separated value (CSV) data files, and many more. See the Quick Fields help file for a complete list of supported database formats and operating requirements for Real-Time Lookup.

Lookup

Lookup is available in the Identification and Image Processing steps of a Quick Fields session. Like other processes, it has a wizard in the task pane that will help you configure the settings. First, you will need to select your third-party database. Then you will specify the lookup criteria and how Lookup tokens are used.

To configure ODBC and select your third-party database

1. In the Lookup Wizard, click on **Administer Data Sources**.

Lookup Wizard
Third-Party Database Selection
Administer Data Sources...
ODBC Data Source Type:
User
ODBC Data Source Name:
< Select Source >
Authentication
Third-Party Database Selection
Specify a third-party database that contains the desired data. A third-party database may be specified through an ODBC data source.
If you have not created an ODBC data source, then you may do so by clicking on the Administer data sources link. This link will open the Data Sources (ODBC) dialog box, from which a new ODBC data source can be created.
Step 1 of 3
Next: Lookup Criteria

Figure 2: Step 1 of the Lookup Wizard. Click on Administer Data Sources to open the ODBC Data Source Administrator box.

2. Select or add the appropriate source for your database from the User DSN tab. You can add a source by clicking **Add** and selecting the desired driver. The other tabs in the **ODBC Data Source Administrator** dialog box are not used in configuring the Lookup process. They are mainly for informational and debugging purposes.

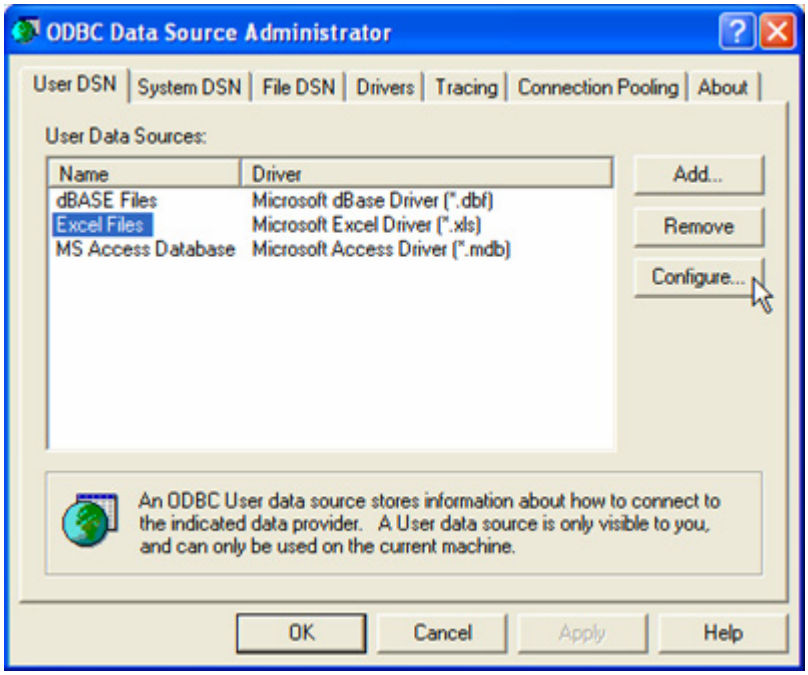

Figure 3: ODBC Data Source Administrator dialog box. You can specify the third-party database.

3. Click **Configure**. A dialog box corresponding to the data source you selected will appear.

4. Specify which database you would like Real-Time Lookup to work with and click **OK**. Remember, a database can simply be an Excel or CSV file.

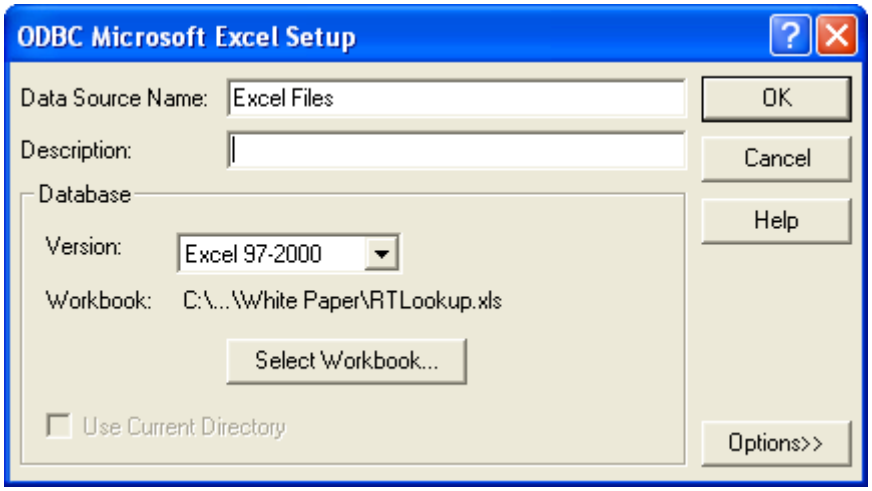

Figure 4: This is the ODBC setup screen for an Excel database. In this case, click Select Workbook and browse for the file you want.

Note: As long as Quick Fields is open, you cannot open this database while it is linked with the Lookup process.

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5. Click **OK** to close the ODBC Data Source Administrator dialog box.

Note: You can also configure ODBC outside of Quick Fields. From the **Start** menu, select **Control Panel**. Double-click **Administrative Tools** and then Data **Sources (ODBC)**. The **ODBC Data Source Administrator** dialog box will appear.

To configure the Lookup process

1. From Step 1 of the Lookup wizard, select "User" for **ODBC Data Source Type** and the desired **ODBC Data Source Name.**

Note: User DSN is only available to the currently logged-in Windows user. System DSN is available to all users who log into the machine. Aside from the access properties, there are no other differences between User DSN and System DSN.

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2. Complete the Authentication section if needed. For instance, if you are accessing data from an SQL database, you will need to provide the appropriate login information.

3. Click on the **Next** button ( ) to go to Step 2 of the wizard.

4. Choose a database table if needed.

5. Specify the lookup value and the database column that the lookup value will be searched under. The lookup value can be a combination of text and tokens. Tokens can specify document properties, field data, or results from data extraction processes such as Zone OCR or Bar Code. The lookup value may or may not be case-sensitive depending on the data source. Real-Time Lookup does not support wildcards.

6. Click **Add**. You may add more criteria, but all criteria must be satisfied to qualify as a match.

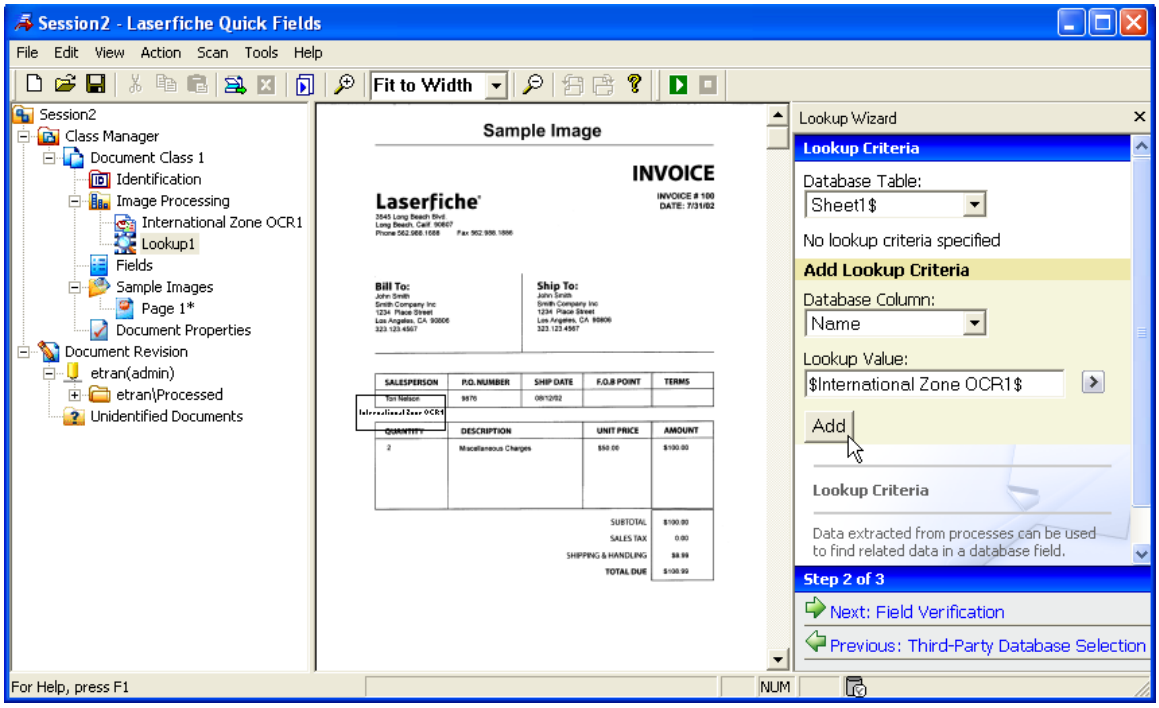

Figure 5: The tree pane shows that Lookup is set to occur after an International Zone OCR process. Therefore, the OCR token is available to use as the lookup value, as seen in the task pane.

If you are using Lookup in the Image Processing step, there is an additional option to mark fields that Lookup could not populate with data with the following icon: . After sending your documents to a repository, this icon will not appear in the Laserfiche client.

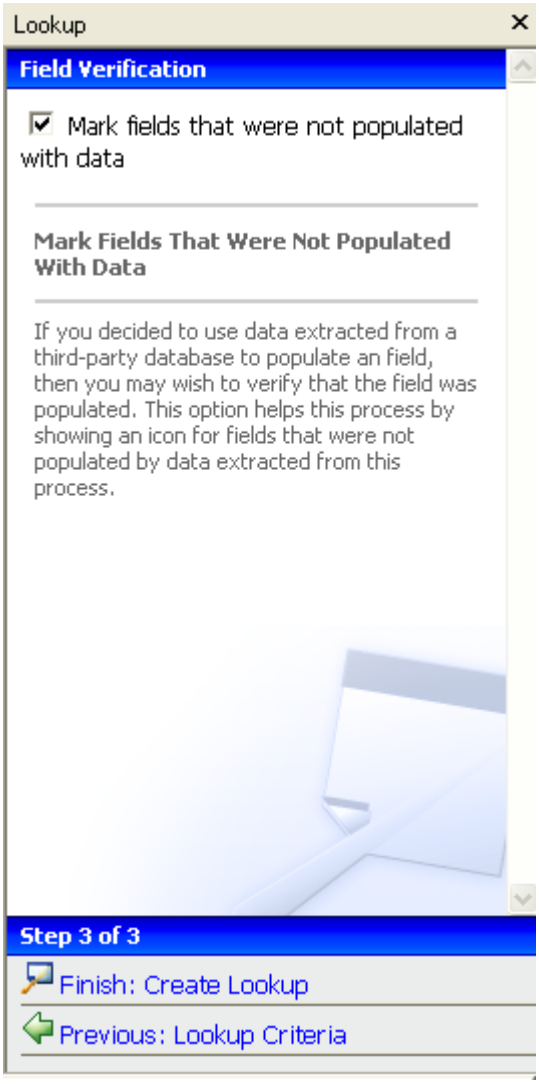
Lookup
Field Verification
Mark fields that were not populated with data
Mark Fields That Were Not Populated With Data
If you decided to use data extracted from a third-party database to populate an field, then you may wish to verify that the field was populated. This option helps this process by showing an icon for fields that were not populated by data extracted from this process.
Step 3 of 3
Finish: Create Lookup
Previous: Lookup Criteria

Figure 6: There is an option to mark the fields that Lookup was unable to populate.

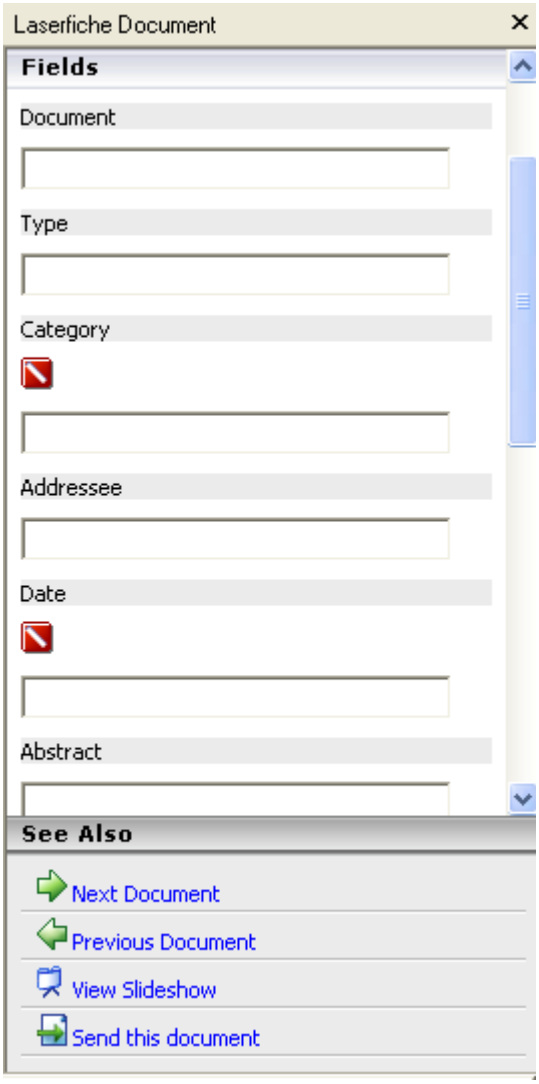

Figure 7 If that option is selected, you will be alerted to fields that Lookup failed to populate.

Once you have configured Lookup, you can use its tokens to identify a page, populate a field, name the document, or determine the document's destination location. The token follows the syntax **$*Process_Column*$**, where *Process* represents the name of the Lookup process and *Column* represents the database column that will contain the desired value from a matching row. For instance, if you are retrieving data from a column called "Birthday" using a Lookup process named "Lookup1", the token would be **$Lookup1_Birthday$**. You can access tokens by clicking the > button next to eligible fields.

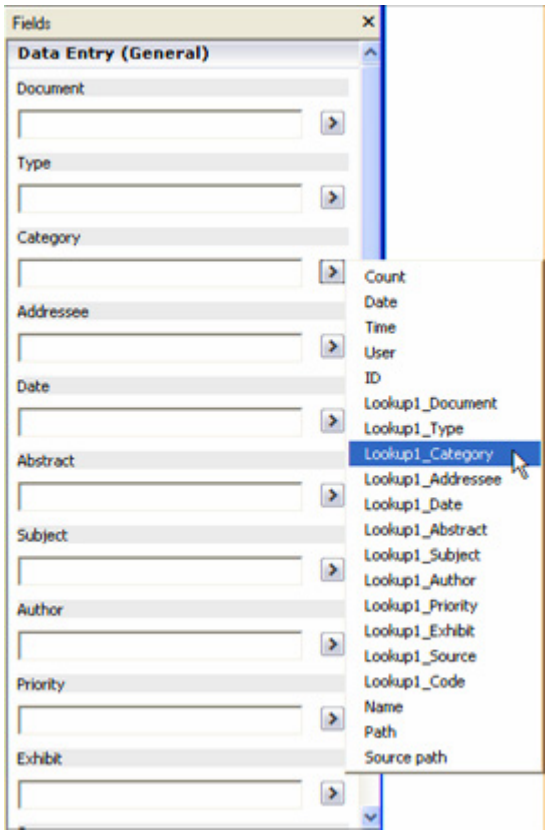

Figure 8: The user in this example clicked the > button for the Category field and is about to use a Lookup token to populate it.

Real-Time Processing

Since a lookup value can be expressed with tokens, a change in the value of one token may affect the value of one or more Lookup tokens. If the user has not modified the data that was retrieved from the third-party database by the Lookup process, then that data (which may only be a portion of the field value) will be replaced with the updated value. On the other hand, if the user has already modified the portion of the field populated by the Lookup process, then the new value extracted from the third-party database will be appended to the current value assigned to the field.

Each field used by a Lookup process is assigned an icon. A field that can update one or more fields when modified is indicated by the following icon: . A field that is updated whenever another field is modified is indicated by the following icon: . The next section gives an example of real-time processing.

Dynamic Field Update Example

The following example demonstrates how real-time processing can affect the field data that will be assigned to a document. In this example, we will assume that the Lookup value is set to a field called "Zip Code" ($[Zip Code]$). This indicates that for each document being processed, the Lookup process will compare the value assigned to the Zip Code field to data in a third-party database. We will also assume that the third-party database associated with the Lookup process contains entries for both "90507" and "90807" in the database column associated with the lookup value.

The following illustration is the Fields task pane associated with the document class that will process the documents in this example. The Zip Code field will be populated with data extracted from an image in the document. The City and State fields will be populated with data extracted from the third-party database when a match for the data specified in the Zip Code field is found.

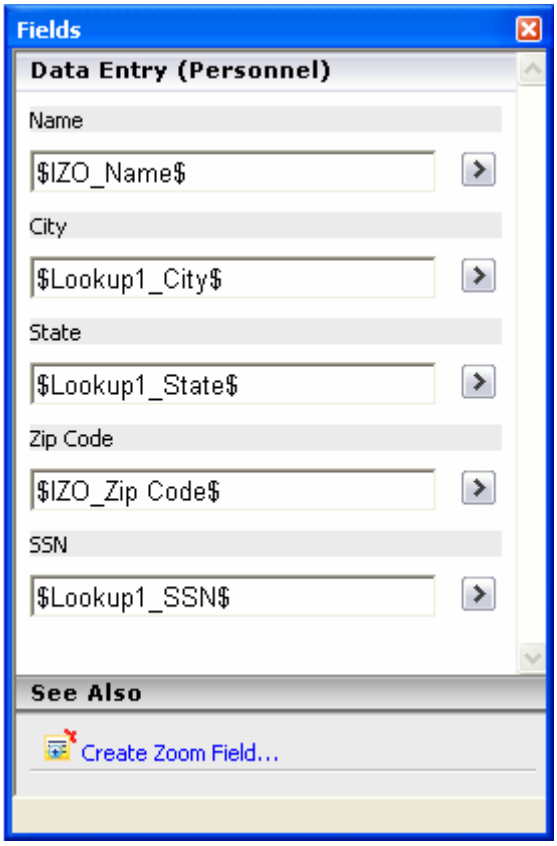

Figure 9: These fields are populated using International Zone OCR tokens and Lookup tokens.

The following two illustrations demonstrate the effects of the Lookup process. Both of these illustrations are of the task pane associated with a particular processed document. The illustration on the left demonstrates the original values that were stored as field data. Please note that the value "90507" was stored in the Zip Code field. This value was found in the third-party database. This caused the Lookup process to store the values "Torrance" and "CA" to the City and State fields, respectively.

At this point, the user will review the field values. By viewing the image(s) associated with the document, the user will realize that the correct zip code value is 90807. The user can then correct this value and reassign the Zip Code field to "90807". Once the user makes this correction, the Lookup process will look up the value "90807" in the third-party database. A matching value will be found in the third-party database, which will result in the automatic correction of the City and State fields. This can be seen in the illustration on the right.

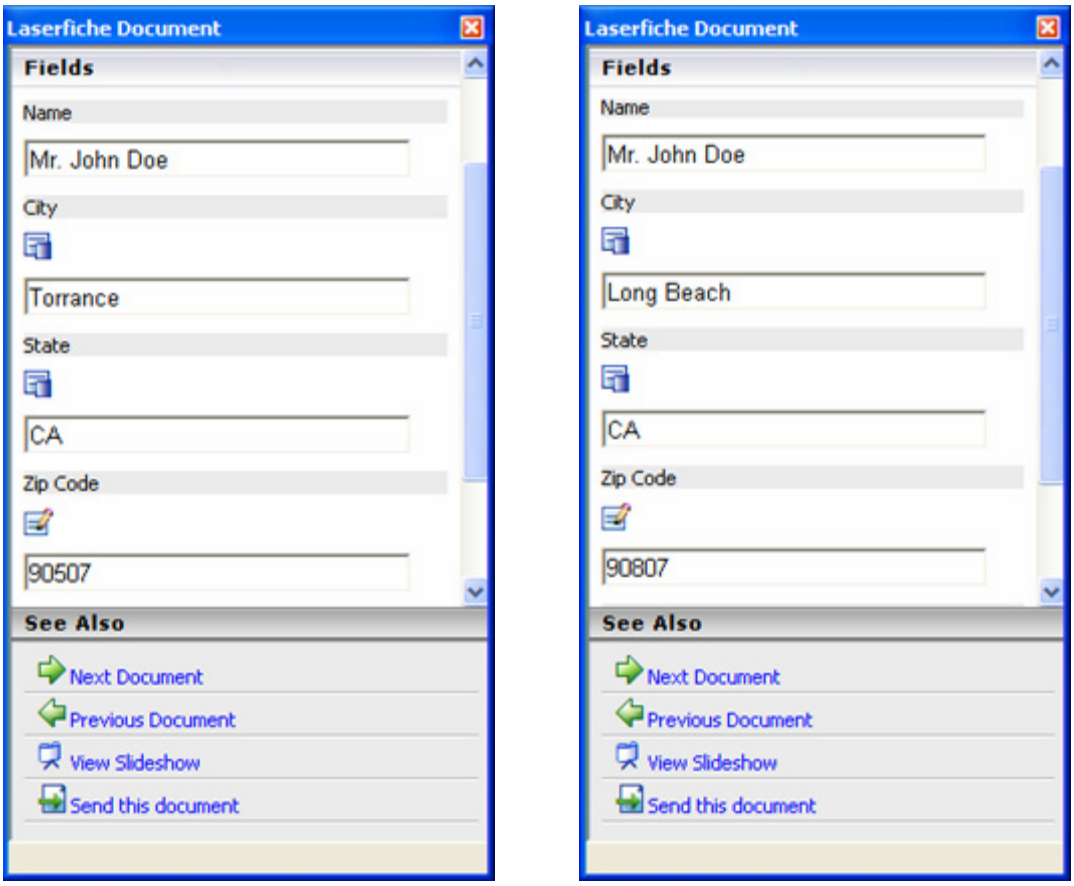

Figure 10: The figure on the left is the document task pane before the user changed the zip code. The figure on the right is the document task pane after the change.

In the illustrations above, the entire data stored in the City and State field were updated with new data from the third-party database. This happened because the values assigned to the fields ("Torrance" and "CA") matched the data originally retrieved by the Lookup process.

We will now discuss two scenarios in which the Lookup field update behavior would be slightly different. The first alternate scenario occurs when data not retrieved from the Lookup process is also present. The manner in which this data was specified does not matter. If this additional data is modified but the Lookup value is kept intact, then the Lookup process will only replace the value originally retrieved by the Lookup process. For example, if prior to modifying the Zip Code field, the user modifies the City field to "Torrance (Los Angeles County)", then when the user updates the Zip Code field to "90807" Lookup would still replace "Torrance" with "Long Beach".

A second alternate scenario occurs when the data retrieved by the Lookup process is modified. This will cause the new value retrieved by the Lookup process to be appended to the field data. For example, if prior to modifying the Zip Code field, the user modifies the value for the State field to "California", then updating the Zip Code value would cause the Lookup process to append the value "CA" to the value assigned to the State field ("CaliforniaCA").

Note: If the lookup value specifies a field that will be populated by the same Lookup process, then this field will not be updated by the Lookup process after its modification.

Field Verification

The configuration process for Field Verification is similar to that for Lookup. After creating the process under "Image Processing," the Field Verification Wizard in the task pane will prompt you to select a third-party database and the lookup criteria, just as you did for Lookup. Unlike Lookup, however, Field Verification performs its main action when it can not find a match in the third-party database. In the last step of the wizard, you can configure whether Field Verification clears unverified data, flags fields with unverified data, or both.

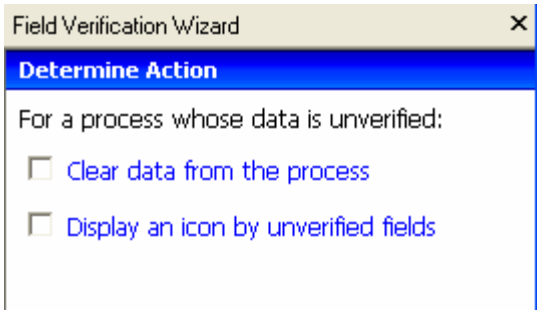
Field Verification Wizard
Determine Action
For a process whose data is unverified:
Clear data from the process
Display an icon by unverified fields

Figure 11: There are two actions you can take when Field Verification encounters unverified data.

Field Verification is only available under Image Processing. You can use Field Verification to alert you of OCR mistakes or to prevent fields from being filled with invalid data. For instance, suppose there is a mistake in Zone OCR such that "Ohio" is read as "Obio." When Field Verification fails to locate "Obio" in the third-party database, it will clear and/or flag that field, so that the scanner operator can fix the error later.

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Author: Edmund Tran
Editor: Regina Carns

Compulink Management Center, Inc.
Global Headquarters
3545 Long Beach Blvd.
Long Beach, CA 90807
U.S.A

Phone: +1.562.988.1688
www.laserfiche.com

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